

REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claims 1, 3, 5-11, 26 and 37-39 are presented for consideration, of which Claims 1, 26, 37, and 39 are independent. Claims 1, 8 and 26 have been amended to clarify features of the subject invention. Support for these changes can be found in the original application, as filed. Therefore, no new matter has been added. Claims 12-14, 27-36, and 40 have been withdrawn from consideration.

Applicants request reconsideration and withdrawal of the objection and rejection set forth in the above-noted Office Action.

The Examiner objected to the specification due to a minor informality. The typographical error has been corrected. Favorable indication is requested.

Independent Claims 1, 3, 5-10 and 39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,611,655 to Fukasawa et al. in view of U.S. Patent No. 4,906,496 to Hosono et al. Independent Claims 26 and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Fukasawa et al. patent in view of the Hosono et al. patent, as previously applied to claim 1, and further in view of U.S. Patent No. 4,475,223 to Taniguchi et al. These rejections are respectfully traversed. Nevertheless, Applicant submits that independent claims 1, 26, 37 and 39, as presented, amplify the distinctions between the present invention and the cited art, whether that art is taken individually or in combination.

In one aspect of the present invention, independent claim 1 recites a pipe structure including a double pipe having a resin inner pipe and a resin outer pipe covering an outside of the inner pipe. The double pipe is used in a vacuum chamber and an outer surface of the double pipe is exposed to a vacuum atmosphere and a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe.

Fukasawa, et al. relates to a vacuum process apparatus for performing a predetermined vacuum process to a target object such as a semiconductor wafer. Fukasawa, et al. makes reference to a double pipe structure that is obtained by inserting the process gas supply pipe 44 in a resin tube 141 and which is arranged between the vacuum process chamber 4a and a gas box 150. (see, column 17, lines 51 et. seq.) However, Fukasawa, et al. does not teach or suggest that aspect of Applicant's invention as recited in Claim 1 wherein the outer surface of the double pipe is exposed to a vacuum atmosphere. Nor is there any teaching or suggestion of the problem of degassing from an inner pipe, a problem which the structure recited in Claim 1 is designed to solve. Accordingly, it is respectfully submitted that Fukasawa, et al. does not disclose and certainly does not suggest the invention as recited in Claim 1.

The secondary reference applied against Fukasawa, et al. is Hosono, et al. However, Hosono, et al. is not understood to teach or suggest the claimed feature of the outer surface of the double pipe being exposed to a vacuum atmosphere and, is not understood to teach or suggest the problem of degassing from an inner pipe. Accordingly, Applicant submits that even in combination with Fukasawa, et al., Hosono, et al. does not teach or suggest the invention as recited in Claim 1.

In another aspect of the present invention, independent claim 26 recites a pipe structure including a double pipe having a resin inner pipe and a resin outer pipe covering an outside of the inner pipe, a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe, and a movable stage in a vacuum chamber having a vacuum atmosphere. The double pipe is coupled to the movable stage and an outer surface of the double pipe is exposed to the vacuum atmosphere.

Independent Claim 26 was amended in a manner consistent with Claim 1 and is therefore believed to distinguish over the art of record for at least the reasons noted above with respect to Claim 1. Thus, as discussed above, neither Fukasawa, et al., nor Hosono, et al., teaches or suggests the claimed feature of the outer surface of the double pipe being exposed to a vacuum atmosphere. Nor do they mention the problem of degassing from an inner pipe.

Taniguchi, et al. was also applied against Claim 26. However, while Taniguchi, et al. refers to a stage coupled to a pipe structure, it is silent with respect to any problems of degassing or of a disturbance to the stage by the pipe action. Applicant submits that the claimed pipe structures as recited in Claim 26 can decrease the degassing amount and the disturbance to the stage by the inner and outer pipes made of a resin material. Such features, are not taught or suggested by the applied reference.

In another aspect of the present invention, independent Claim 37, recites a pipe structure including a double pipe having a resin inner pipe and a resin outer pipe covering an outside of the inner pipe, and a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe, wherein the double pipe is connected to a stage.

As noted in the Official Action neither Fukasawa, et al., nor Hosono, et al. teach or suggest a double pipe which is coupled or connected to the stage. The Examiner combines Taniguchi, et al. with the above art to meet that shortcoming. However, as discussed above, Taniguchi, et al. does not make any reference to the problems of degassing and of a disturbance to the stage by the pipe action. Without any reference to such problems, there is clearly no motivation in the art to combine Taniguchi, et al. with the other art of record in the manner suggested by the Examiner. The claimed pipe structure, as set forth in Claim 37, can decrease the degassing amount and the disturbance to the stage by the inner and outer pipes made of a resin material. That claimed invention is simply not taught by the combined art.

In a further aspect of the present invention, independent claim 39 recites a pipe structure including a double pipe having a resin inner pipe and a resin outer pipe covering an outside of the inner pipe, and a discharge mechanism for discharging fluid in a space between the inner pipe and the outer pipe. The double pipe is in a chamber, pressure in the chamber is less than pressure of atmosphere in a space between the inner pipe and outer pipe, and the pressure of atmosphere in the space between the inner pipe and outer pipe is less than pressure in the inner pipe.

As noted above, Fukasawa, et al. features a double pipe structure arranged between the vacuum process chamber and a gas box. The apparatus is obtained by combining a plurality of vacuum process chambers which are installed in an expensive clean room. Inside the clean room, generally, is not a vacuum atmosphere. Consequently, it is not seen how Fukasawa, et al. can teach or suggest the claimed aspect of the invention as recited in Claim 39 wherein the

chamber is less the pressure of an atmosphere in a space between the inner and outer pipe. Nor is it seen how Fukasawa, et al. can be combined with Hosono, et al. to teach such features of the invention as recited in independent Claim 39.

For the foregoing reasons, Applicant submits that the present invention, as recited in independent claims 1, 26, 37 and 39, is patentably defined over the cited art.

Dependent claims , 3, 5-11, 26, 37 and 38 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. Further individual consideration of these dependent claims is requested.

Applicant further submits that this Amendment After Final Rejection clearly places this application in condition for allowance. This Amendment was not earlier presented because Applicant believed that the prior Amendment placed the application in condition for allowance. Accordingly, entry of the instant Amendment, as an earnest attempt to advance prosecution and reduce the number of issues, is requested under 37 CFR 1.116.

Applicant submits that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'L. Stahl', written over a horizontal line.

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